

**REMARKS**

1. **Post-Interview.** Applicant sincerely expresses appreciation for the Examiner's  
5 courtesy during a recent interview by teleconference. In keeping with the spirit of the  
discussion, Applicant has cancelled a substantial number of claims to simplify the  
Examiner's task in completing his review and approval of the application. Applicant  
notes that the cancellation of claims and amendment of claims herein is not in any way  
10 to be taken as an admission on the Applicant's part that any objections raised by the  
Examiner were met by the Applicant with a narrowing of the subject matter to which  
Applicant is entitled. Accordingly, Applicant reserves its right to seek protection of a  
commensurate and broader scope at a later date, and is submitting the revisions herein  
solely for purposes of expediting and simplifying examination of the current subject  
matter for which protection is sought.

15 During the interview, Applicant pointed out that two key features of the invention for  
which coverage is currently sought concerns the control and managing of all bids via the  
market for electrical energy and for the dynamical allocating, or scheduling, of such  
electrical energy across distribution grids from generators to consumers. The invention  
20 is novel in that, among other things, it provides automated and continuous trading of  
electrical energy. It is novel in that it provides a mechanism for bids and settlement of a  
market for electrical energy. Further, it was discussed that between the mechanisms of  
bids and settlement, the invention provides a mechanism for operating standard  
equipment (devices) required for the ultimate consumption of electricity including  
25 generation, storage, conversion, and transportation, and for metering the usage of such  
devices.

To assist the Examiner in reviewing these aspects of the invention, Applicant submits  
herewith an amended independent Claim 1 and amended subsequent dependent  
30 Claims for consistency. Claim 1 appears as follows:

1. (currently amended) A computer implemented method for scheduling a  
device producing, consuming, storing, converting, or transporting electricity  
based upon a scheduling interval collection comprising at least one scheduling  
35 interval, said at least one scheduling interval comprising: an amount of an

electricity commodity and a cost of said amount over a scheduling time interval, comprising the steps of said computer:

managing a bid interval collection of bid intervals of said electricity commodity, each bid interval comprising: a bid price and a bid amount over a bid time interval;

determining a desired amount of said electricity commodity over a desired scheduling time interval;

determining a resultant scheduling interval collection based upon said desired amount of said electricity commodity over said desired scheduling time interval and based upon said managed bid interval collection to create and output a device operating schedule.

For the convenience of the Examiner, Applicant highlights some changes made, as follows.

Scheduling replaces Planning

Applicant points out to the Examiner that Applicant has replaced usage of the word, planning, and its variations with the word, scheduling, and its variations. Such replacement is made for consistency. Support can be found in Claim 1, among many other places, wherein the invention provides a device operating **schedule**.

Producing, Consuming, Storing, Converting, or Transporting electricity

Applicant further clarifies the invention by claiming a method for scheduling a device **producing, consuming, storing, converting, or transporting** electricity. Support can be found on page 1, line 23 through page 2, lines 1-12 (emphasis added):

Many devices use one or more ephemeral, fungible commodities during their operation. Some devices **can make** one or more ephemeral, fungible commodities during their operation. Examples include but are not limited to hydro-electric dams, video content providing servers, airports preparing airplanes for departure (thus providing airplane seats on those airplanes) and freeway on ramps. Some devices **consume** one or more ephemeral, fungible commodities during their operation. Examples include but are not limited to home appliances, most factories, video content subscribers, air flight travelers and motorists trying

to enter freeways via free way on-ramps. Some devices transport one or more ephemeral, fungible commodities during their operation. Examples include but are not limited to electrical transmission lines, communication networks, airline transfer points connecting various air flights and freeway interchanges. Some devices make one kind of ephemeral, fungible commodity while consuming another kind of ephemeral, fungible commodity. Examples include but are not limited to DC to AC power converters and network bridges, routers, gateways and firewall servers.

10 Scheduling Interval replaces Knowledge Interval

Applicant replaced knowledge interval with scheduling interval to further clarify the invention and to be consistent with the usage of the word, schedule and its variations. Support can be found as follows. For background, it should be appreciated that a knowledge interval comprises: a commodity at (during) a time interval, and a cost (see Figs.4B and 7A and on page 48, lines 17-19.) Also, Applicant replaced commodity with **electricity commodity**. Support can be found in Claim 36 (emphasis added):

36. A method as in Claim 35,  
wherein said ephemeral, fungible **commodity** belongs to the collection comprising **DC electricity and AC electricity**.

Further, as discussed hereinabove, Applicant replaced 'planning' with 'scheduling.' Hence, planning interval becomes **scheduling interval**. Support can be found in the discussion hereinabove and in the original Claim 1, as follows (emphasis added):

1. (original) A method of planning a device consuming an ephemeral, fungible commodity based upon a knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost, comprising the steps of:  
determining said ephemeral, fungible commodity needs over a planning time interval; and  
examining said knowledge interval collection based upon said ephemeral, fungible commodity needs **over said planning time interval** to create a device operating schedule.

Applicant is of the opinion that replacing knowledge interval with scheduling interval will alleviate any possible confusion.

5 Finally, Applicant has canceled Claim 15 and incorporated the usage of the bidding mechanism into independent Claim 1.

Contract replaces Committed

10 Applicant replaced the word, committed and its variations in the Claims with the word, contract and its variations. Such replacements were made to further clarify the invention by using a business term as opposed to a technical term. Both terms are used interchangeably and both are accurate. Support can found page 13, lines 12-28 (emphasis added):

15 To summarize, in at least each and every example just mentioned there is a need to provide a method of planning which accounts for the economics of consumption, generation and transport of these ephemeral, fungible commodities. There is a further need to be able to account for the time variations in the economics of consumption, generation and transport of these ephemeral,  
20 fungible commodities. There is a further need to control such devices based upon the results of such planning. There is a further need to meter usage and cost of such devices under operation based upon the time variations in the economics. What is further needed is a trading mechanism for electrical ephemeral, fungible commodities optimizing the scheduling, congestion  
25 management, ancillary services, metering, billing and settlements of accounts for electrical grids. Further, what is needed is an AC power transmission market system complying with the physics of AC power networks. Further, since transmission rights are predominantly constrained by significant flow gates, **what is needed should account for the effect on the significant flow gates for each contracted transmission.** A method and mechanism is needed for  
30 planning the operations of devices and further controlling the devices based upon trading generation and transmission rights in a timely, reliable and efficient manner which automatically guarantees correct operation of the power grid.

35 Computer Implemented Method replaced Method

To further clarify the invention, Applicant has amended the claims for a computer environment. Support can be found throughout the Specification, and, for example, on page 48, line 20 through page 49, line 7:

5 Note that in certain embodiments, knowledge interval 1210 may be implemented  
in computer accessible memory coupled to a computer. In certain further  
embodiments, knowledge interval 1210 may be implemented as a table  
containing a commodity 1212, time interval 1214 and cost 1216 as an entry in the  
table. In certain other further embodiments, knowledge interval 1210 may be  
10 implemented as a record structure instance containing a pointer to record  
structure instances of commodity 1212, time interval 1214 and cost 1216. In  
certain other further embodiments, knowledge interval 1210 may be implemented  
as an object instance containing references to object class instances of  
commodity 1212, time interval 1214 and cost 1216. In certain further  
15 embodiments, knowledge interval 1210 may be implemented as an object  
instance containing pointer references to object class instances of commodity  
1212, time interval 1214 and cost 1216. In certain other further embodiments,  
knowledge interval 1210 may be implemented as an object instance containing  
handle references to object class instances of commodity 1212, time interval  
20 1214 and cost 1216.

New Dependent Claims 61-63

Claim 61 appears as follows:

25

Claim 61. (new) The computer implemented method as in Claim 1, further  
comprising the steps of:

in response to said created and outputted device operating schedule,  
providing timely notification of said created and outputted device operating  
30 schedule;

controlling operation of said device using said created and outputted  
device operating schedule;

metering usage of said device using said created and outputted device  
operating schedule; and

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making settlement for said usage of said device.

Support for Claim 61 can be found on page 13, lines 12-28 (emphasis added):

5 To summarize, in at least each and every example just mentioned there is a  
need to provide a method of planning which accounts for the economics of  
consumption, generation and transport of these ephemeral, fungible  
commodities. There is a further need to be able to account for the time variations  
10 in the economics of consumption, generation and transport of these ephemeral,  
fungible commodities. There is a further need to **control** such devices based  
upon the results of such planning. There is a further need to **meter** usage and  
cost of such devices under operation based upon the time variations in the  
economics. What is further needed is a trading mechanism for electrical  
ephemeral, fungible commodities optimizing the scheduling, congestion  
15 management, ancillary services, metering, **billing and settlements** of accounts  
for electrical grids. Further, what is needed is an AC power transmission market  
system complying with the physics of AC power networks. Further, since  
transmission rights are predominantly constrained by significant flow gates, what  
is needed should account for the effect on the significant flow gates for each  
20 contracted transmission. A method and mechanism is needed for planning the  
operations of devices and further controlling the devices based upon trading  
generation and transmission rights in a **timely**, reliable and efficient manner  
which automatically guarantees correct operation of the power grid.

91  
Claim 62 appears as follows:

25 Claim 62. (new) The computer implemented method as in Claim 1, wherein  
any of the following is true:

said managing said bid interval collection is performed in real-time;  
said determining said desired amount of said electricity commodity over  
30 said desired scheduling time interval is performed in real-time;  
determining a resultant scheduling interval collection is performed in real-  
time; and  
said device operating schedule is created and operated in real-time.

35 Support for Claim 62 can be found in the title (real-time) and by the use of the word,  
ephemeral.

Claim 63 appears as follows:

5 Claim 63. (new) The computer implemented method as in Claim 1, further comprising the steps of:

9 a1 selecting from said managed bid interval collection a subset of contracted bid intervals, based upon said desired amount of electricity commodity over said desired scheduling time interval; and

10 from said contracted bid intervals, determining an associated set of scheduling intervals, said associated set of scheduling intervals determining said resultant interval collection.

Support for Claim 63 can be found in Claims 16 and 17.

- 15 2. 35 U.S.C. §102. The Examiner rejected Claims 1-60 under 35 U.S.C. §102(e) as being anticipated by Takriti (U.S. Patent No. 6,021,402).

20 As discussed during the interview, Takriti is focused on an old way of scheduling by way of mathematical optimization. Takriti teaches planned operation of an electric generator given a variety of inputs:

- load forecast(s);
- power trade(s);
- unit fuel costs;
- unit operating constraints; and
- 25 - other unit operating parameters in a portfolio of assets.

The result is a schedule and fuel costs for the unit(s) in question.

To wit: Takriti teaches:

- 30
- (Figure 2) Box 113, "Projected Trades" is listed as an input to the "Risk Management System";
  - (Figure 3), "Forecasted Trades for October 15, 1996" is listed as an input for the
  - 35 "Risk Management System" and the outputs are listed as the unit operating schedule and fuel cost;

- (Col. 1,5-10) "The present invention generally relates to computer systems for scheduling the generating units of electric utilities... given... (2) a prediction of trading transactions that may take place over the next few days, ...;

5

- (Col. 4, 65-) "The tool allows the user to model accurately the uncertain trading transactions... Given... (5) an estimate of the price of electricity in the open market at each hour of the week, and (6) a set of possible trading transactions for the next two to seven days... ;

10

- (Col. 5, 65-) "The present invention is a tool that can be used to schedule the generating units of an electric utility while taking power trading and fluctuation in fuel prices into consideration;" and

15

- (Col. 7, 55-) "Here is a more accurate description of the input of this process... . 4. The projected power-trading transactions in the market: A view of the market and what type of trading transactions may take place must be supplied by the user."

20

In stark contrast to the claimed invention, nowhere does Takriti teach or suggest creating an energy market, and especially as the result.

Nowhere does Takriti teach or suggest fundamentally addressing the formation of a market for power and transmission and the mechanics of creating such market, liquidity, and standardized products for efficient trading.

25

Specifically, Takriti does not teach nor suggest any bid/ask mechanism. Takriti does not teach nor suggest any dynamic market as claimed in the bidding mechanism of Claim 1.

30

Therefore, Applicant is of the opinion that Claim 1 overcomes the 102 rejection. Accordingly, Applicant is of the opinion that Claim 1, and hence its dependent claims, is in condition for allowance. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §102.

35

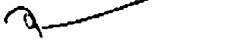
3. Should the examiner deem it helpful, he is encouraged to contact applicant's representative Julia A. Thomas or Michael A. Glenn at (650) 474-8400 to discuss any



further revisions that may be necessary to bring the application in condition for allowance. However, Applicant has carefully revised the claims in keeping with the Examiner's comments made during the interview and considers that the application now is in condition for allowance.

5

Respectfully Submitted,

  
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Proposed Replacement Claims

1. A computer implemented method for scheduling planning a device producing, consuming, storing, converting, or transporting an ephemeral, fungible commodity electricity based upon a knowledge scheduling interval collection comprising at least one knowledge scheduling interval, said at least one knowledge scheduling interval comprising: of said ephemeral, fungible commodity an amount of an electricity commodity and at a time interval containing a cost of said amount over a scheduling time interval, comprising the steps of said computer:
- managing a bid interval collection of bid intervals of said electricity commodity, each bid interval comprising: a bid price and a bid amount over a bid time interval;
- determining said ephemeral, fungible commodity needs a desired amount of said electricity commodity over a desired scheduling planning time interval; and
- examining determining a resultant said knowledge scheduling interval collection based upon said desired amount of said ephemeral, fungible commodity electricity commodity needs over said desired scheduling planning time interval and based upon said managed bid interval collection to create and output a device operating schedule.

Claims 2-15 (cancelled)

16. The computer implemented A method as in Claim 15, wherein the step of maintaining managing said bid interval collection is further comprised of the steps of:
- making a first bid interval of a first bid amount at a first bid price for a first time interval to create a first bid of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval; and
- committing of said first bid interval to creating a committed first committed contracted bid interval of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval and said committed flag; and
- wherein each of said knowledge scheduling intervals of said knowledge scheduling interval collection further contains an amount of said ephemeral, fungible electricity commodity; and

\_\_\_\_\_ wherein the step creating said first knowledge scheduling interval is comprised of the step of:

~~creating said first knowledge interval of said knowledge interval collection based upon said first committed contracted bid interval of said bid interval collection.~~

5 ~~17.17. The computer implemented A-method as in Claim 16,~~

\_\_\_\_\_ wherein the step of creating said first knowledge scheduling interval is further comprised of the steps of:

\_\_\_\_\_ setting said amount of said first knowledge scheduling interval by said first bid amount of said first committed contracted bid interval;

10 \_\_\_\_\_ setting said first time interval of said first knowledge scheduling interval by said first bid time interval of said first committed contracted bid interval; and

\_\_\_\_\_ setting said first cost of said first knowledge scheduling interval by said first bid price of said first committed contracted bid interval.

~~18.18. The computer implemented A-method as in Claim 16,~~

15 \_\_\_\_\_ wherein the step of determining said desired amount of said ephemeral, fungible electricity commodity needs is further comprised of the step of:

\_\_\_\_\_ examining analyzing delivery times and desired schedules of equipment usage entries of an equipment usage collection;

20 \_\_\_\_\_ wherein each equipment usage entry comprised of equipment usage entries each containing a equipment usage entry delivery time and an equipment usage entry desired need schedule for said electricity commodity for said ephemeral, fungible commodity to create said ephemeral, fungible commodity needs over said planning time interval comprising an amount.

~~19.19. The computer implemented A-method as in Claim 18,~~

25 \_\_\_\_\_ wherein determining said desired amount of ephemeral, fungible electricity commodity needs over said planning scheduling time interval further comprises a cost limit, and

wherein the step making said first bid is further comprised of the step of:

30 \_\_\_\_\_ making said first bid of said first bid amount at said first bid price for said first time interval to create said first bid of said first bid amount at said first bid price for said first time interval of said ephemeral, fungible commodity.

~~20.20. The computer implemented A-method as in Claim 19,~~

\_\_\_\_\_ wherein the step of ~~determining~~examining said ~~resultant knowledge~~scheduling interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule further comprises the step of:

- 5 \_\_\_\_\_ determining an equipment usage plan ~~comprising~~containing at least onean equipment usage item, ~~said item having comprised of an activation time and an action belonging to an action collection;~~

\_\_\_\_\_ wherein said action collection comprises any of:

- \_\_\_\_\_ a ~~ing-start-action for indicating starting said device;~~  
 10 \_\_\_\_\_ a, stop-action for indicating stopping said device; and  
 \_\_\_\_\_ a throttle-action for throttling said device.

~~21-21. A computer implemented A-method of controlling said said device of Claim 20, consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one of said knowledge interval of said ephemeral, fungible~~  
 15 ~~commodity at said time interval containing said cost, comprising the steps of:~~

\_\_\_\_\_ creating said device operating schedule as in the computer implemented method of Claim 20~~planning said device consuming said ephemeral, fungible commodity as recited in Claim 20 to create said device operating schedule; and the step of:~~

\_\_\_\_\_ operating said device based upon said device operating schedule.

- 20 ~~22-22. The computer implemented A-method as in Claim 21,~~  
 \_\_\_\_\_ wherein the step of operating said device comprises at least oneany step of the steps of the collection comprising the steps of:

- \_\_\_\_\_ starting said device based upon said device operating schedule;  
 \_\_\_\_\_ stopping said device based upon said device operating schedule; and  
 25 \_\_\_\_\_ throttling said device based upon said device operating schedule.

~~23-23. (cancelled) A-method as in Claim 22,~~

~~wherein the step operating said device comprises the steps of:~~

- ~~starting said device based upon said device operating schedule;  
 stopping said device based upon said device operating schedule; and  
 30 throttling said device based upon said device operating schedule.~~

~~24-24. The computer implemented A-method as in Claim 2322, wherein any of:~~

\_\_\_\_\_ ~~wherein the step the step starting said device comprises the step of:~~

starting said device is based upon said at least one of said equipment usage item of said equipment usage plan comprising a start-action;

~~\_\_\_\_\_ wherein the step stopping said device comprises the step of:~~

~~stopping said device is based upon said at least one of said equipment usage item of~~

5 ~~said equipment usage plan comprising a stop-action; and~~

~~\_\_\_\_\_ wherein the step throttling said device comprises the step of:~~

~~throttling said device is based upon at least one of said equipment usage item of said equipment usage plan comprising a throttle-action.~~

25-25. The computer implemented A-method as in Claim 24,

10 ~~\_\_\_\_\_ wherein said at least one equipment usage item comprised of said throttle-action is further comprised of a throttle-setting; and~~

~~\_\_\_\_\_ wherein the step throttling said device is based further comprised of the step of: throttling said device based upon said at least one of said equipment usage item of said equipment usage plan comprising said throttle-action and said throttle-setting.~~

15 26-26. The computer implemented A-method as in Claim 24,

~~\_\_\_\_\_ wherein said at least one equipment usage item comprised of said start-action is further comprised of a throttle-setting; and~~

20 ~~\_\_\_\_\_ wherein the step starting said device is further comprised of the step of: starting said device based upon said at least one of said equipment usage item of said equipment usage plan comprising said start-action and said throttle-setting.~~

27-27. The computer implemented A-method as in Claim 22, further comprising the step of:

25 ~~\_\_\_\_\_ providing wherein said device includes a device collection, said device collection comprised of at least two distinct devices producing, consuming, storing, converting, or transporting said ephemeral, fungible electricity commodity based upon said resultant knowledgescheduling interval collection comprising at least one of said knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost; and~~

30 ~~\_\_\_\_\_ further comprising the steps of: further comprising: said method of planning said device consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost to~~

\_\_\_\_\_ creating and outputting ~~ea~~ said device collection operating schedule; and  
the step of:

\_\_\_\_\_ operating said device collection based upon said device collection  
operating schedule.

5    ~~28-28. The computer implemented A-method as in Claim 27,~~

\_\_\_\_\_ wherein the step of operating said device collection is further comprised of the  
steps of:

\_\_\_\_\_ starting at least one of said distinct devices of said device collection based  
upon said device operating schedule;

10    \_\_\_\_\_ stopping at least one of said distinct devices of said device collection  
based upon said device operating schedule; and

\_\_\_\_\_ throttling at least one of said distinct devices of said device collection  
based upon said device operating schedule.

~~29-29. The computer implemented A-method as in Claim 21, further comprising the step~~  
15    of:

\_\_\_\_\_ metering consumption by said device of said ~~ephemeral, fungible electricity~~  
commodity.

~~30-30. The computer implemented A-method as in Claim 29,~~

20    \_\_\_\_\_ wherein the step of ~~metering consumption by said device~~ is further comprised of  
the steps of:

\_\_\_\_\_ measuring a consumption rate of said device of said ~~ephemeral, fungible~~  
~~electricity commodity within within~~ a metering time interval;

25    \_\_\_\_\_ determining said ~~a metering~~ cost of said ~~ephemeral, fungible electricity~~  
commodity ~~within within~~ said metering time interval based upon said resultant  
knowledge scheduling time-interval collection;

\_\_\_\_\_ ~~to create~~ a metering cost factor of said ~~ephemeral, fungible electricity~~  
commodity during said metering time interval using said metering cost; and

30    \_\_\_\_\_ calculating a consumption cost for said device based upon said  
consumption rate of said device of said ~~ephemeral, fungible commodity with said~~  
metering time interval; and based upon said metering cost factor of said ~~ephemeral,~~  
~~fungible commodity during said metering time interval and based upon said metering~~  
~~time interval to create a consumption cost for said device consuming said ephemeral,~~  
~~fungible commodity over said metering time interval.~~

31-31. The computer implemented A-method as in Claim 30,

\_\_\_\_\_ wherein the step metering consumption by said device is further comprised of the steps of:

- 5 \_\_\_\_\_ maintaining managing an accumulated cost for said device of said ephemeral, fungible electricity commodity; and  
\_\_\_\_\_ updating said accumulated cost for said device of said ephemeral, fungible commodity based upon said consumption cost for said device consuming said ephemeral, fungible commodity over said metering time interval.

32-32. The computer implemented A-method as in Claim 1,

- 10 \_\_\_\_\_ wherein said device produces, consumes, stores, converts, or transports a second ephemeral, fungible electricity commodity;

\_\_\_\_\_ wherein said method of planning said device is further comprised of:

- \_\_\_\_\_ said method of planning scheduling said device producing, consuming, storing, converting, or transports consuming said ephemeral, fungible electricity commodity and  
15 said second ephemeral, fungible electricity commodity is based upon said resultant knowledgescheduling interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second resultant knowledgescheduling interval collection, said second comprising at least one knowledgescheduling interval comprising: a of said second ephemeral,  
20 fungible electricity commodity and a second cost over a second at a time interval containing a cost; and

\_\_\_\_\_ wherein the step determining said desired amount of said ephemeral, fungible electricity commodity needs is further comprised of the step of:

- 25 \_\_\_\_\_ determining a desired amount of said said second ephemeral, fungible electricity commodity needs over said planning scheduling time interval; and

\_\_\_\_\_ wherein the step examining said knowledge interval collection to create creating and outputting said device operating schedule is further comprised of the step of:

- 30 \_\_\_\_\_ examining analyzing said knowledgescheduling interval collection based upon said desired amount of said ephemeral, fungible electricity commodity needs over said planning scheduling time interval and said desired amount of said second ephemeral, fungible electricity commodity needs over said planning scheduling time interval to create said device operating schedule.

33-33. The computer implemented A-method as in Claim 1,

- 35 \_\_\_\_\_ wherein said device generating a second ephemeral, fungible electricity commodity;

\_\_\_\_\_ wherein said ~~computer implemented method of planning said device is further comprises the step of:~~

5 \_\_\_\_\_ ~~said method of planning said device said device consuming said ephemeral, fungible electricity commodity and generating said second ephemeral, fungible electricity commodity based upon said knowledgescheduling interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second knowledgescheduling interval collection comprising at least one knowledgescheduling interval of said said second ephemeral, fungible electricity commodity and at a time interval containing a price over~~  
10 ~~a second time interval;~~

\_\_\_\_\_ wherein the step determining said ephemeral, fungible ~~electricity commodity needs is further comprised of the step of:~~

15 \_\_\_\_\_ ~~determining needs for said second ephemeral, fungible electricity commodity needs over said planningscheduling time interval; and~~  
\_\_\_\_\_ wherein the step examining said knowledgescheduling interval collection to create ~~and output said device operating schedule is is further comprised of the step of:~~  
~~examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible electricity commodity needs over said planningscheduling time interval to create a device operating schedule.~~

20 34.34. The computer implemented A-method as in Claim 1,

\_\_\_\_\_ wherein said device transports a second ephemeral, fungible ~~electricity commodity;~~

\_\_\_\_\_ wherein said computer implemented method further comprises the step of:

25 \_\_\_\_\_ ~~said device consuming said electricity commodity and generating said second electricity commodity based upon said knowledgescheduling interval collection and based upon a second knowledgescheduling interval collection comprising at least one knowledgescheduling interval of said second electricity commodity and a price over a second time interval;~~

30 \_\_\_\_\_ wherein the step determining said electricity commodity needs further comprises the step of:

\_\_\_\_\_ ~~determining needs for said second electricity commodity over said scheduling time interval; and~~

\_\_\_\_\_ wherein the step examining said knowledgescheduling interval collection to create and output said device operating schedule is further based upon said second



~~electricity commodity needs over said scheduling time interval, wherein said method of planning said device is further comprised of:~~

~~said method of planning said device consuming said ephemeral, fungible commodity and generating said second ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second knowledge interval collection comprising at least one knowledge interval of said second ephemeral, fungible commodity at a time interval containing a price;~~

~~wherein the step determining said ephemeral, fungible commodity needs is further comprised of the step of:~~

~~determining said second ephemeral, fungible commodity needs over said planning time interval; and~~

~~wherein the step examining said knowledge interval collection to create said device operating schedule is further comprised of the step of:~~

~~examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule.~~

Claim 35 (cancelled)

36.36. A method as in Claim 351,

\_\_\_\_\_ wherein said ephemeral, fungible ~~electricity~~ commodity belongs to the collection comprising DC electricity and AC electricity.

Claims 37-60 (cancelled)

Claim 61. (new) The computer implemented method as in Claim 1, further comprising the steps of:

\_\_\_\_\_ in response to said created and outputted device operating schedule, providing a notification of said created and outputted device operating schedule;

\_\_\_\_\_ controlling operation of said device using said created and outputted device operating schedule;

\_\_\_\_\_ metering usage of said device using said created and outputted device operating schedule; and

\_\_\_\_\_ making settlement for said usage of said device.

Claim 62. (new) The computer implemented method as in Claim 1, wherein any of the following is true:

\_\_\_\_\_ said managing said bid interval collection is performed in real-time;

\_\_\_\_\_ said determining said desired amount of said electricity commodity over said

5 desired scheduling time interval is performed in real-time;

\_\_\_\_\_ determining a resultant scheduling interval collection is performed in real-time;

and

\_\_\_\_\_ said device operating schedule is created and operated in real-time.

10 Claim 63. (new) The computer implemented method as in Claim 1, further comprising the steps of:

\_\_\_\_\_ selecting from said managed bid interval collection a subset of contracted bid intervals, based upon said desired amount of electricity commodity over said desired scheduling time interval; and

15 \_\_\_\_\_ from said contracted bid intervals, determining an associated set of scheduling intervals, said associated set of scheduling intervals determining said resultant interval collection.